Subject: Re: Surface type for CRTM
From: Ronald.Vogel@noaa.gov
Date: Mon, 10 Aug 2009 18:23:52 -0400
To: Michiko.Masutani@noaa.gov
CC: Quanhua Liu <Quanhua.Liu@noaa.gov>, Yong Han <Yong.Han@noaa.gov>, Paul van Delst <Paul.Vandelst@noaa.gov>, David Groff <David.Groff@noaa.gov>, Tom Kleespies <Thomas.J.Kleespies@noaa.gov>, Jack Woollen <Jack.Woollen@noaa.gov>

----- Original Message -----
From: Michiko Masutani <Michiko.Masutani@noaa.gov>
Date: Monday, August 10, 2009 4:44 pm
Subject: Surface type for CRTM

> Attached is the information about CRTM surface type I gathered from
> Ron
> Vogel and Banghua. We still have to work out fresh snow and old
> snow.

Since the snow depth threshold is so small, it may be best to assume a surface with _any_ snow should be treated as snow in CRTM. That is the GSI approach. NOTE: this refers to the %coverage value you input for d:

```
Surface(iprof)%Water_Coverage = a
Surface(iprof)%Land_Coverage  = b
Surface(iprof)%Ice_Coverage   = c
Surface(iprof)%Snow_Coverage  = d
```

I.e., snow depth is not an input for IR RT calculations. You only need snow depth to decide if your grid cell is snow-covered or not.

> It seem there is only one ice. So if sea ice is covered by snow is
> still treated as ice. Is this correct?

We haven't done detailed analysis on the radiative transfer through snow and ice. For now, it is fine to assume a snow surface when ice is snow-covered.

> Any comments appreciated.
>
> Michiko
>
> --
> Michiko Masutani Ph.D. (Wyle Information Systems)
> michiko.masutani@noaa.gov,
> Office:Rm 807 Tel. (301)763-8000x7551 Cell: (240)413-6727
> NOAA/NWS/NCEP/EMC 5200 Auth Rd. Rm 207 Camp Springs MD 20746
> Fax:(301)763-8545
> http://www.emc.ncep.noaa.gov/research/JointOSSEs
> http://www.emc.ncep.noaa.gov/seminars